

MAST ARM BRACKET

6 1/2" Mounting Arm Top and Bottom
14-04-6206

The device described herein is for mounting vehicle traffic signals to rigid cylindrical structures. Design of the device shall conform to the latest ASSHTO standards for wind loading and ITE standards for attaching to the signal. The AASHTO and ITE standards will be followed except where exceptions are taken within this standard. Seco-South Mast-O-Bracket Series CM42 with a type 3 tube wire entrance, and 50" cable assembly as shown on the drawing OAE.

GENERAL DESIGN

This traffic signal mounting device shall be a multi piece assembly providing adjustable components to mount the signal in a horizontal or vertical position relative to the roadway surface. The device shall mount to any type of structure and provide complete adjustment of the mounting hardware as shown in the drawing to align the traffic signal toward the driver. Adjustment and installation shall be made using simple hand tools. Modifying, milling, drilling, or threading of the supporting structure shall not be required. The device shall include the signal attachment arms, support tube, swivel plate, cable stays, and main mount. All cast parts shall be from aluminum or brass and fasteners shall be of stainless steel.

MAIN MOUNT

The device shall have a single uniformly cast main mounting surface with two standoffs perpendicular to the mounting surface as shown in the drawing. The width of the mount shall be approximately 9-1/2" long and 4-1/2" wide. The standoffs shall rest against the supporting structure and held in place by cables attached to the mount and wrapped around the structure. The standoffs shall be approximately 1-3/8" long and the same width as the mount. Each standoff shall be "V" shaped in the center and flat on each side perpendicular to the centerline of the "V". Within the "V", along each line, shall be multi-step detents forming flats perpendicular to the centerline of the "V". The intent of this design is to provide stable positioning of the mount against various shaped structures (such as multi sided, round, or square tubes). Any mount that does not provide stable positioning on any structure will be unacceptable.

The face of the main mount, opposite side from the standoffs, shall be designed for attaching a swiveling plate. The swiveling plate shall be secured to the mount using two bolts and washers through slotted holes in the plate and into threaded bosses in the mount. Two sets of bosses shall be provided in the mount located ninety degrees (90°) apart. The swivel plate and main mount shall be designed to provide an alignment mechanism positioning the plate correctly on the mount, an axis for rotating the plate on the mount and align the slotted holes with the threaded bosses.

A cable locking plate shall be provided on both sides of the mount that will secure the cable to the mount. Through holes shall be provided in the mount and locking plates for threaded studs to be inserted. Using a nut and washer installed on the cable stud shall provide a means to tighten the cable around the structure. During installation of the mount the locking plate shall allow the cable to be hand tighten against the structure by permitting the free end to be pulled through the plate. Once the locking plate is tighten against the cable then the cable is tighten against the structure using a nut and washer. The design of the locking plate shall use one bolt, attaching the locking plate to the mount, and the nut and washer, used to tighten the cable, shall be used to secure the free end of the cable between the cable and plate.

SWIVEL PLATE

The swivel plate shall be cast in one piece providing a matched surface to the main mount, slotted holes for adjustment and attachment, and two tube clamps. The diameter of the plate shall be approximately 5".

An alignment boss shall be provided on the plate that will fit into an alignment hole, approximately 2" diameter, in the main mount. Rotation of the swivel plate shall be unrestricted for three hundred and sixty degrees (360°) without the bolts attaching the plate to the main mount installed.

The slots shall allow the swivel plate to rotate a minimum of fifty-four degrees (54°) with the bolts installed through the slots in the threaded bosses on the main mount.

The two clamps shall be designed to compress around an aluminum tube, described below. Each clamp shall have two bolts securing the removable part of the clamp to the swivel plate. The compression onto the tube shall secure the tube preventing it from movement in any direction with the specified torque on the bolts.

ALUMINUM TUBE

The aluminum tube shall be manufactured from aluminum alloy 6061-T6 material and be schedule 40 thickness. The length shall be a minimum of five feet (5') and have wire entrance slots, 3/4" x 9", as shown in the drawing. The outside of the tube shall be smooth for positioning within the clamps on the swivel plate throughout the length of the tube.

SIGNAL MOUNTING ARM, TOP AND BOTTOM

Each mounting arm shall be designed to slip fit onto the aluminum tube. Each arm shall be secured to the tube using two 3/8" set screws with square heads.

The bottom arm shall be designed with a stop for the tube to be positioned against when the arm is secured to the tube. A wireway shall be provided from the interior of the bottom arm into the

tube. A serrated fitting shall be provided to fit against the mounting point of the vehicle signal and secured to the signal using a tri-stud with washer device. A black ABS plastic cover shall be provided covering the wireway within the bottom arm and secured to the arm with two sheet metal screws.

The top arm shall be designed that will allow the arm to be positioned at any point on the tube. The arm shall be cast in one piece. A serrated fitting shall be provided to fit against the mounting point of the vehicle signal and secured to the signal using a single bolt and washer device.

The length of the arms shall be as shown on the drawing.

CABLE ASSEMBLES

Cables shall be 3/16" stainless steel aircraft cable with a securely attached threaded stud on one end. The free end of the cable shall be electrically fused together preventing the cable from fraying. Two cables shall be used to secure the main mount to the supporting structure. Standard cable lengths are shown on the drawing shall be provided. Special cable length identified on the plans or orders shall be provided in place of the standard lengths.

HARDWARE

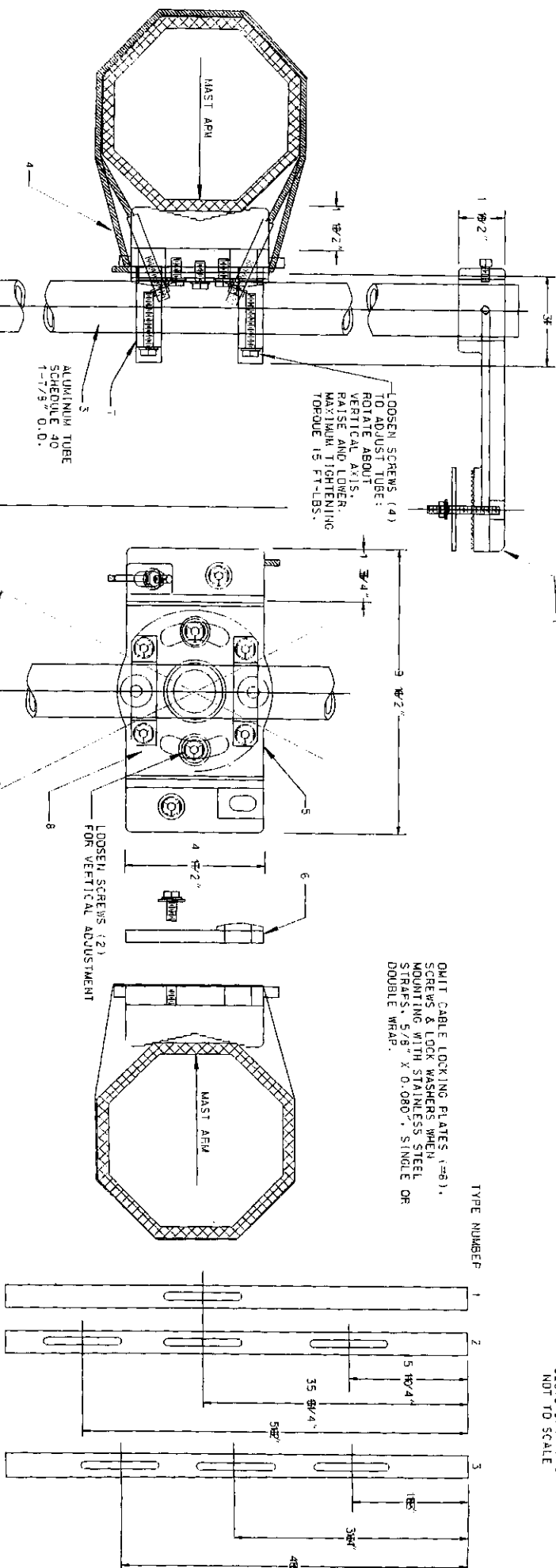
All hardware shall be plated to prevent corrosion. All bolts and washers shall be 3/8" – 16 TPI with 9/16" hex heads. The setscrews shall be 3/8" – 16 TPI with square heads stainless steel. The studs in the arms for attaching to the signal head shall be 5/16" – 18 TPI stainless steel. All nuts and washers shall be provided

CAST MATERIAL

Aluminum shall be used for all cast parts. The material shall be 713 alloy meeting ASTM B179 standards. When specified on order or in plans the cast parts shall be copper alloy no. C83600, (formerly know as leaded red brass, composition bronze, 85-5-5-5).

TUBE WIRE ENTRANCE

SLOTS 3/4" X 9"
NOT TO SCALE



PARTS LIST

ITEM NO.	DESCRIPTION
1	SIGNAL MOUNTING ARM TOP-6 1/2"
2	SIGNAL MOUNTING ARM BOTTOM-6 1/2"
3	ALUMINUM TUBE SCH 40-60" LONG
4	CABLE ASSEMBLY
5	CM-42 MATH. ASSEMBLY
6	LESS CABLE & TUBE
7	CABLE LOCKING PLATE
8	TUBE LOCK DOWN BAR
9	SWIVEL PLATE
10	COVER, BLACK ABS, 6 1/2" MOUNT

NOTE:

SCREWS
3/8" - 16 TPI - 9/16" HEX HEAD
3/8" - 16 TPI - 3/8" SQUARE HEAD
5/16" - 18 TPI STUDS WITH 1/2" HEX NUTS
WITH WASHERS.

CABLE ASSEMBLY (TWO REQUIRED)
LENGTH 50" INCLUDING THE FACED CONNECTOR, 1-1/2" LONG 3/8"-16 TPI
AND 1-3/8" LONG 5/16" HEX. FLUID LOCKING NUT WITH WASHER PROVIDED.
FREE END OF CABLE WELDED TO PREVENT FRAYING.

DATE	1/1/02
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REV	01